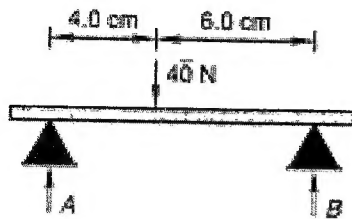


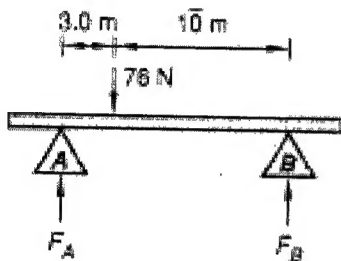
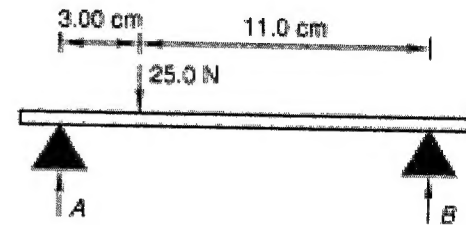
Torque and Beam Problems



1) Weightless beams do not exist. We use weightless beams in beginning physics problems to make the problems simple because the weight on the beam is not considered. The beam shown is weightless. Find the vertical forces at A and B. To do so, set the sum of the moments about A or B equal to zero. Then set the sum of the vertical forces equal to zero to find the other upward force.

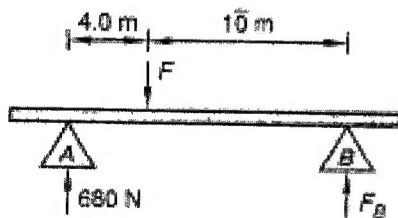
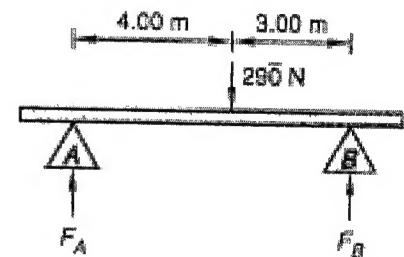
other upward force.

2) Find the vertical forces at A and B. Set the moments about A or B equal to zero. Then set the sum of the vertical forces equal to zero to find the other upward force.



3) A weightless beam supports a weight of 76 newtons, as shown. (a) Set the sum of the moments about A equal to zero to find F_B . (b) Set the sum of the vertical forces equal to zero to find F_A .

4) A weightless beam supports a weight of 290 newtons, as shown. (a) Set the sum of the moments about A equal to zero to find F_B . (b) Set the sum of the vertical forces equal to zero to find F_A .



5) The upward force of support A on the weightless beam is 680 newtons. Sum the moments at B to find the value of F . Then sum the vertical forces to find the upward force at B.

6) Find the force at A and the force at B.

